

6AG7

6AG7
POWER PENTODE
SINGLE-ENDED METAL TYPE

GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3	ac or dc volts
Current	0.65	amp

Direct Interelectrode Capacitances:
With Pin No.1 and Pin No.3 connected to Pin No.5

Grid No.1 to Plate	0.06 max.	μμf
Input	13	μμf
Output	7.5	μμf

Characteristics, Amplifier Class A_1

Plate Voltage	300	volts
Grid-No.2 Voltage	150	volts
Grid-No.1 Voltage	-3	volts
Peak AF Grid-No.1 Signal Voltage	3	volts
Zero-Signal DC Plate Current	30	ma
Max.-Signal DC Plate Current	30.5	ma
Zero-Signal DC Grid-No.2 Current	7	ma
Max.-Signal DC Grid-No.2 Current	9	ma
Plate Resistance (Approx.)	0.13	megohm
Transconductance	11000	μmhos
Load Resistance	10000	ohms
Total Harmonic Distortion	7	per cent
Max.-Signal Power Output	3	watts

Mechanical:

Mounting Position	Any
Maximum Overall Length	3-1/4"
Seated Length	2-19/32" ± 3/32" ←
Maximum Diameter	1-5/16"
Bulb	Metal Shell, MT-8
Base	Small-Wafer Octal 8-Pin (JETEC No.B8-21)
Basing Designation for BOTTOM VIEW	8Y ←

Pin 1 - Shell, Grid No.3
Pin 2 - Heater
Pin 3 - No Connection
Pin 4 - Grid No.1
Pin 5 - Cathode
Pin 6 - Grid No.2
Pin 7 - Heater
Pin 8 - Plate

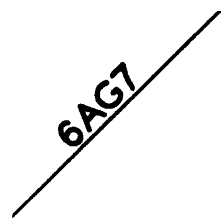
AMPLIFIER - Class A_1

Maximum Ratings, *Design-Center Values*:

PLATE VOLTAGE	300 max.	volts
GRID-No.2 (SCREEN) VOLTAGE	300 max.	volts

← Indicates a change

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6AG7
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GRID-No.1 (CONTROL-GRID) VOLTAGE:		
Positive bias value	0 max.	volts
PLATE DISSIPATION	9 max.	watts
GRID-No.2 INPUT	1.5 max.	watts
→ PEAK HEATER-CATHODE VOLTAGE:		
Heater negative with respect to cathode	90 max.	volts
Heater positive with respect to cathode	90 max.	volts

Typical Operation in 4-Mc Bandwidth Video Amplifier Circuit of Fig. 1:

With Grid-Resistor Bias

Used where dc restoration is accomplished in grid-No.1 circuit of the 6AG7

Plate Supply Voltage	300	volts
Grid-No.2 Voltage†	115	volts
Zero-Signal Grid-No.1 Voltage	0	volts
Grid-No.1 Resistor	0.25 to 0.5	megohm
Grid-No.1 Signal Voltage (Peak to Peak)	4	volts
Zero-Signal Plate Current	45	ma
Zero-Signal Grid-No.2 Current	13	ma
Load Resistor	3500	ohms
Voltage Output (Peak to Peak)	135	volts

With Cathode-Resistor Bias

Plate Supply Voltage	300	volts
Grid-No.2 Voltage°	125	volts
from series resistor of	25000	ohms
Grid-No.1 Voltage	-2	volts
Cathode Resistor (Bypassed with capacitor of 250 μf, approx.)	57	ohms
Grid-No.1 Signal Voltage (Peak to Peak)	4	volts
Zero-Signal Plate Current	28	ma
Zero-Signal Grid-No.2 Current	7	ma
Load Resistor	3500	ohms
Voltage Output (Peak to Peak)	140	volts

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:		
For fixed-bias operation	0.25 max.	megohm
For cathode-bias operation	1.0 max.	megohm

† Obtained from supply having good regulation.

° Obtained preferably from 300-volt plate supply through resistor of value shown.

→ Indicates a change

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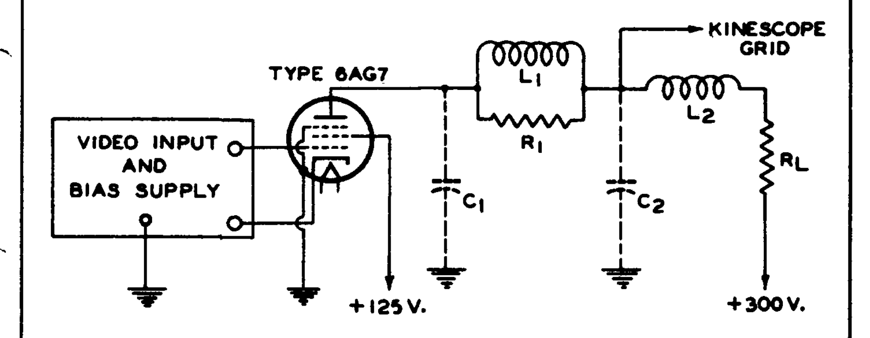


6AG7

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6AG7

Fig. 1 – Typical Video Voltage Amplifier Circuit Having Bandwidth of 4 Mc.

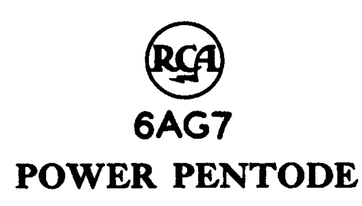
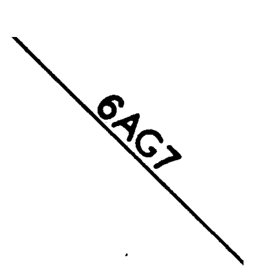


C_1 = 9.5 $\mu\mu f$ = Tube Output Capacitance +.Socket Capacitance + Wiring Capacitance + Coil Capacitance
C_2 = 19 $\mu\mu f$ = Kinescope Capacitance + Socket Capacitance + Wiring Capacitance + Coil Capacitance
L_1 = 250 μh Filter Inductor
L_2 = 125 μh Filter Inductor
R_1 = 20000-Ohm, Non-Reactive Resistor
R_L = 3500-Ohm, 10-Watt, Non-Reactive Resistor

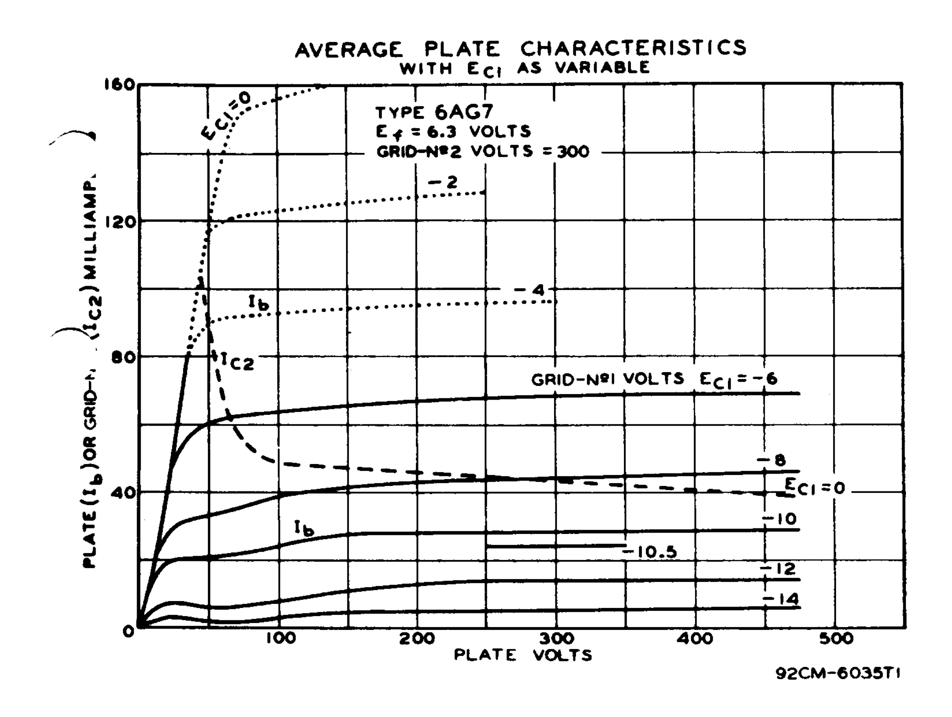
6AG7

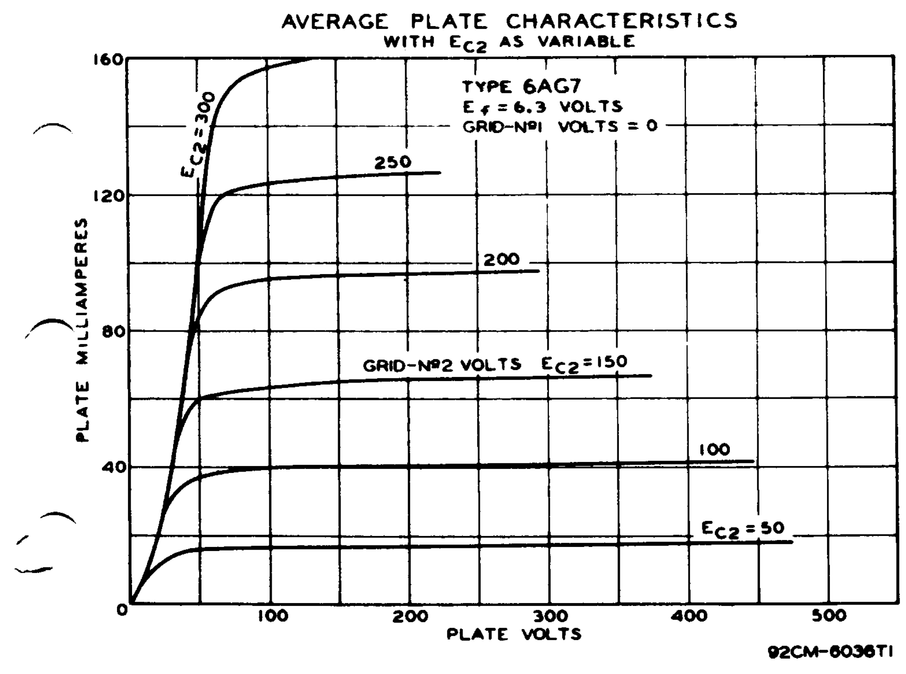


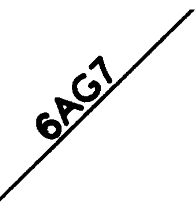
6AG7
AVERAGE PLATE CHARACTERISTICS
WITH E_{C1} AS VARIABLE

6AG7
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AVERAGE CHARACTERISTICS

TYPE 6AG7
E_f = 6.3 VOLTS
PLATE VOLTS = 300

GRID-№2 VOLTS E_{C2}=300
250
200
150
100
50

12000
8000
4000
0
TRANSCONDUCTANCE - MICROMHOS

-20 -15 -10 -5 0
GRID-№1 VOLTS
92CM-6037T1

AVERAGE CHARACTERISTICS

TYPE 6AG7
E_f = 6.3 VOLTS
PLATE VOLTS = 300

GRID-№2 VOLTS E_{C2}=300
250
200
150
100
50
E_{C2}=300
250
200
150
100
50
I_b
I_{C2}

35
30
25
20
15
10
5
PLATE (I_b) OR GRID-№2 (I_{C2}) MILLIAMPERES

-20 -15 -10 -5 0
GRID-№1 VOLTS
92CM-6038T1